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for Drugs and Drug Addiction

EU4MD SPECIAL REPORT

Emerging evidence of Afghanistan's role as a producer and supplier of ephedrine and methamphetamine

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Since 2019, the EMCDDA has enhanced cooperation with the European Neighbourhood Policy partners ⁽¹⁾ within the framework of [the EU4Monitoring Drugs \(EU4MD\) project](#) funded by the European Union. The project supports national and regional readiness to identify and respond to drug-related security and health threats.



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Introduction

This paper provides an analysis of the available data that suggest that a methamphetamine industry is rapidly being established in Afghanistan. The analysis provided here is based on information from key informants, documentary sources and the analysis of satellite imagery. Although the findings must be regarded as preliminary and require further verification and follow up, they are worrying. The situation also appears to be a particularly dynamic one, with recent developments in methamphetamine production in the country, including the transition from production based on ephedrine extracted from over-the-counter medicines to ephedrine isolated from ephedra plants (Mansfield and Soderholm, 2019). The paper also highlights an expanding market for ephedra that links the mountainous central region of Afghanistan to the former deserts of the south-west (Mansfield et al., 2019).

This work is based on qualitative exploratory research conducted in August 2020 with ephedrine and methamphetamine ‘cooks’ in the district of Bakwa, south-west Afghanistan, combined with the analysis of high-resolution satellite imagery of the region. This research documents how some households in the once barren desert landscape of Bakwa appear to have diversified from farming a limited range of crops that included opium poppy to a livelihood that now also includes the processing of ephedrine and methamphetamine. This paper makes an initial assessment of the potential scale of methamphetamine production in this district, as well as highlighting the opportunities for employment and income that this rapidly developing economy generates for the area. The data available suggest that Afghanistan has in a short period of time become a producer and supplier of relatively large quantities of low-cost ephedrine and methamphetamine, with outputs that may have the potential, over time, to rival the country’s production of opiates. The research also found growing evidence that production in Afghanistan may now be beginning to have an impact on neighbouring states and the international market, and that a threat exists that in the medium term Afghanistan could become a significant source of synthetic drugs ⁽²⁾.

Innovation as a way of life

The media narrative regarding rural Afghanistan is often one of a population and way of life that is ‘conservative’, ‘traditional’ and ‘unchanged’; however, the reality is often quite different. It is increasingly apparent that innovation not only has been instrumental in the survival of a rural population that farms in increasingly difficult environmental conditions, but is critical to sustaining a growing population that finds itself subjected to a protracted conflict. In south-western Afghanistan, in particular, farmers have become increasingly used to adapting to their challenging circumstances (Mansfield, 2020), for example by increasing the use of herbicides and pesticides to counter plant and insect infestations. In this part of the country, there has also been a dramatic uptake in solar technology (Rowlatt, 2020) over the last decade, including its use in drawing groundwater from 100-m depths, a move that has allowed agricultural

⁽²⁾ In this report, methamphetamine is described as a synthetic drug, however, when produced from ephedrine that has been extracted from plants, it is technically more precise to describe this as a semi-synthetic substance.

production to spread to areas in which, previously, conditions meant that this was difficult. As well as other crops, some of this production has been of opium poppy.

An important innovation over the last three years has been the diversification into the production and processing of significant quantities of ephedrine and methamphetamine by rural households in the south-west. Methamphetamine production had already been documented in the deserts of the south-west five years ago; however, it was relatively uncommon (Bjelica, 2015). In 2017, the United Nations Office on Drugs and Crime (UNODC) reported methamphetamine production in the province of Nimroz dating back to 2013 and indications of possible production in Herat province (UNODC, 2017), but concluded that, according to expert opinion, most of the methamphetamine consumed in Afghanistan was likely to be imported. At that time, the production of methamphetamine was based on ephedrine or pseudoephedrine extracted from medicines such as cough syrups or decongestants (Mansfield, 2019) (Figure 1). However, the high costs and level of chemistry knowledge required were beyond that of many farmers in the area, who usually had only a basic level of education (Mansfield and Soderholm, 2019).

FIGURE 1

A pile of empty medicine bottles (a source of ephedrine) in Bakwa, Farah, September 2018



There was a growing realisation among those involved in the Afghan drug trade that the ephedra plants growing wild in the central highlands for hundreds of years were also a potential source of ephedrine for methamphetamine manufacture. This realisation has led to the emergence of this new and rapidly expanding industry. It is not currently known, but there is much speculation about, how those involved in the Afghan drug trade came to know that the ephedra crop known locally as *oman*, or *bandak*, could be used to produce methamphetamine (Hendricks, 2020; Mansfield et al., 2019). Fieldwork and high-resolution satellite imagery, however, reveal just how commonplace this practice has now become and how it has created the conditions for an expanding industry in extracting ephedrine from ephedra plants and, consequently, a significant methamphetamine production capacity.

Ephedra: the wild crop in the mountains

Ephedra has grown wild in the mountains of central Afghanistan for centuries. Faring best at an altitude of over 2 500 metres, the crop is a perennial grass or bush, which is typically harvested between late July and October (Mansfield and Soderholm, 2019). Those that harvest the crop ascend the mountains, navigate the rocky outcrops where the plant grows and cut new growth with a sickle before loading it into bags and making the return journey for onward sale or use (Mansfield et al., 2019) (Figure 2).

FIGURE 2

Harvesting ephedra by hand in Taywara, Ghor, September 2019



Traditionally, the crop was sold to pharmacies, some of which dried and shipped the plant to India, but mostly the crop appears to have been used as a household fuel (Mansfield et al., 2019).

The situation began to change in 2016 with the arrival of traders, many from south-western Afghanistan, who set up stalls during the harvest season in some of the mountainside villages in districts such as Baghran, in northern Helmand, and Taywara, in the central province of Ghor, and were looking to purchase the ephedra crop. These traders were aware that the ephedrine in the crop could be extracted and used to make methamphetamine. They would purchase the fresh crop from the villagers, dry it outdoors over a period of 25 days and then ship it for sale on a wholesale market that had been established in the barren terrain of the desert lands of the Bakwa district in Farah province. Interviews with traders and transporters in Taywara and Bakwa reveal that a single trader might purchase and transport as much as 15 tonnes of ephedra (Mansfield et al., 2019). Over time, this network of purchasers and transporters appears to have expanded to other districts in Ghor, as well as to provinces such as Ghazni and Wardak.

The extraction of ephedrine: 'this is easy, everyone can learn this job'

In Bakwa, the process of making methamphetamine from pseudoephedrine extracted from over-the-counter medicines, such as cough syrups and decongestants, was complicated and expensive, limiting the number of people involved and the profits made. At that time, methamphetamine traders faced two major challenges. First, expensive and large quantities of over-the-counter medicines had to be imported from neighbouring Iran or Pakistan. Second, the extraction process required a more than rudimentary knowledge of chemistry, uncommon among the rural population of south-western Afghanistan. Typically, the entire chemical process would occur under the auspices of one cook, or *ustad*, in a single building.

The move to plant-based production in Bakwa appears to have changed this, creating a two-tiered production system, with separate laboratories for extracting ephedrine from ephedra plants and for making methamphetamine from the ephedrine. Ephedrine, known locally as 'F', can be extracted using a relatively simple and low-cost method. Many in Bakwa have become involved in this activity, creating a cottage industry and providing an additional source of income. According to an ephedrine 'cook' in Bakwa, 'this is easy, everyone can learn it'; another villager in Bakwa described how the number of local ephedrine cooks had risen from one to 30 in a period of three years.

According to cooks in the area, extracting ephedrine from the dried and ground ephedra plant takes about 24 hours and requires only basic skills. One or two bags of ephedra (70-140 kg) can be processed in an outbuilding of a residential compound, and there are reports that a large number of households in Bakwa, and the surrounding area, have taken up production (Figure 3).

FIGURE 3

A compound converted into a suspected ephedrine laboratory, Bakwa, Farah, August 2019

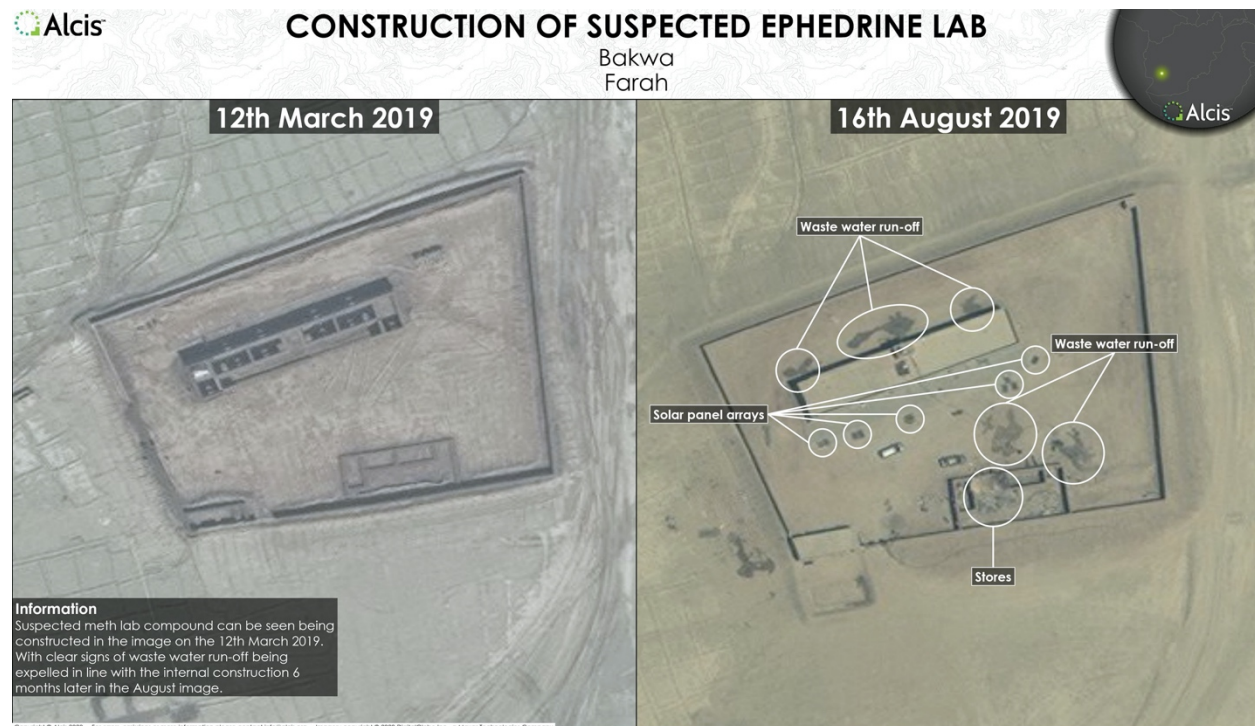


In addition to these relatively small operations, more specialised processing facilities, known locally as ‘factories’, also appear to have emerged across the district of Bakwa (Figure 4). These are mostly found in old abandoned compounds, but in some cases are purpose built and are typically run by local ephedrine traders, some of whom were, or are, also involved in the opium trade. These factories appear to employ up to seven people and process larger amounts of ephedra, up to 450 kg (one *khawar*) at a time, with some factories processing a number of batches in parallel. The cooks in the factories are little more than semi-skilled labourers and cannot be compared to the more specialist heroin or methamphetamine cooks, whose pay is higher. They typically receive a fixed daily wage of up to EUR 4 (USD 5) ⁽³⁾, regardless of the number of kilograms of ephedrine extracted. The large amounts of equipment required and the significant amounts of solid and liquid waste produced make these factories easier to identify than the smaller compounds from satellite images.

⁽³⁾ The prices in Afghanistan are reported in US dollars. To have a better understanding of the findings at European level, we have converted the prices into euros at a conversion rate of USD 1 = EUR 0.8485. The currency conversions to euros throughout the report are based on European Central Bank average exchange rates for August 2020, when the data were collected (https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/eurofxref-graph-usd.en.html).

FIGURE 4

A suspected purpose-built ephedrine extraction factory, Bakwa, Farah, March and August 2019



The process used for extracting ephedrine from ephedra is the same in household compounds or in the larger factories. The first step is to purchase ephedra in Bakwa, usually from a specially established and well-known bazaar, although in the last few years other bazaars have also now begun to appear. This bazaar also sells all of the chemicals and equipment required.

Cooks from the factories report that a factory owner will typically purchase a sample of around 90 kg (20 *man*) of dried ephedra from traders, transport it to their compounds and mill it themselves, extracting a small batch to assess if the desired quantity of ephedrine can be achieved (Figure 5). If satisfied with the yield of ephedrine, the factory owner will place an order for up to 4 500 kg (10 *khawar*) of ephedra, and then commission labourers to mill the crop and transport it to the factory. Although ephedra from a multitude of provinces in the mountainous central region is available locally, ephedrine cooks from Bakwa reportedly favour the crops from Baghran, the most northern district in Helmand, Taywara in Ghor and Pur Chaman in Farah. Ephedra from these neighbouring districts is believed to be of the highest quality, providing the most generous yields of ephedrine.

FIGURE 5
Milling a test batch of ephedra, Bakwa, Farah August 2020



Once ground and sieved, the ephedra is thoroughly mixed with water, petrol, salt and caustic soda in a barrel and left to soak, normally overnight. Processing a 450 kg batch requires about 14 large plastic barrels, each of around 220 l, making the activity hard to conceal. The mixture is then filtered and the resulting liquid is transferred into what is known locally as a 'metal dish', but is actually a purpose-built metal tank of an around 1 000-l capacity (Figure 6) and heated.

FIGURE 6

Metal tank used in the ephedrine extraction process, Bakwa, Farah, August 2020



The next stage involves salt, car battery acid and xylene, a solvent known locally as 'XL' and another heating cycle, by which time the liquid will have evaporated, leaving a residue with the appearance of 'dried yogurt'. This substance is ephedrine and when cold is ground by hand, ready for onward sale in the bazaar to traders from Nimroz and Herat, or directly to local methamphetamine production facilities. It is reported that a 450-kg batch of ephedra would be expected to produce around 15 kg of ephedrine (Figure 7).

FIGURE 7

Ephedra, ephedrine and methamphetamine: names, prices and amounts



Methamphetamine: 'it's technical, it takes time to learn'

In contrast to the extraction of ephedrine, the production of methamphetamine, known locally as *shisha*, requires greater knowledge and skills. It is also a more expensive and time-consuming process — taking up to 48 hours — which restricts the scale of production and the number of those involved. As such, methamphetamine production appears to be considered a more niche and specialised activity. A cook in eastern Bakwa describing the chemical process said, 'it's technical, it takes time to learn'.

Skilled methamphetamine cooks are therefore a more specialised group than the cooks typically working in an ephedrine extraction factory. Some have experience from heroin production, whereas others may have paid to undertake an apprenticeship under a more experienced chemist or learnt it from a family member. Cooks who can produce high-quality methamphetamine may earn up to EUR 10.56 (USD 12.5) per kg, more than double the daily rate reportedly paid to those extracting ephedrine. Skilled methamphetamine chemists may be retained by a laboratory on a permanent basis, and provided with food, drink, clothes and a higher rate of pay.

Methamphetamine production is cleaner than ephedrine extraction, which results in large quantities of both solid and liquid waste. Typically, it appears that three to four people will be involved (including the cook or cooks), processing around 15 kg of ephedrine for each batch. To maintain quality, methamphetamine cooks tend to work inside a building in a relatively dust-free environment, which is difficult to achieve in the desert environment of Bakwa. These factors make it difficult to distinguish an illicit methamphetamine laboratory from a typical household compound in the area.

During interviews with cooks in Bakwa, a detailed process for methamphetamine production has been recorded. To avoid the risk of imitation, some essential details have been deliberately omitted from the following description. The processing begins with mixing ephedrine with iodine and water, then caustic soda and red phosphorus are added. Xylene is used to further process the mixture which goes through a series of stages that result in a powder that is left to dry. The last stage of the process is to place the powder in what are described locally as 'frames' where the final product, crystal methamphetamine develops. The drug is placed in plastic bags before being packed into plastic boxes to protect the fragile crystals (Figure 8).

FIGURE 8

Methamphetamine crystals produced in Bakwa, Farah, September 2020



The process described by the cooks is similar to the methamphetamine production method known as ‘the Nagai method’. In Europe, this is the most common method used for methamphetamine production in Czechia (EMCDDA and Europol, 2019).

It was reported that a number of these batches can be processed in parallel, producing up to 80 kg of methamphetamine per week. However, it appears that the quality of this product is variable. For example, some inexperienced cooks produce methamphetamine for only the domestic market using alternative chemicals, such as diesel fuel instead of expensive toluene, or inferior quality iodine and xylene. The domestic grade product is sold for EUR 178 (USD 210) per kg, whereas the export quality product costs EUR 258 (USD 305) per kg.

A price-critical market

The cooks and other key informants in the study report that the methamphetamine industry in Bakwa is characterised as being price-critical, with low margins, little liquidity and a heavy reliance on credit.

Locals in the vicinity of Abdul Wadood bazaar are acutely aware of fluctuations in prices, production costs and the potential revenues that can be derived from processing ephedra or producing methamphetamine. Cooks report that, when prices rise above a certain threshold, laboratory owners will activate operations, bringing together the materials required to work on a batch of ephedrine or methamphetamine. It is claimed that many of the raw materials are provided on credit, to be repaid when the batch of ephedrine or methamphetamine has been sold. This means that those running the operations are often in debt to traders. These debts and the arrangements for their repayment have an impact on the profitability of ephedrine and methamphetamine production.

A detailed analysis of costs, conversion rates and current prices suggests that the costs and profits involved in producing ephedrine are often quite low. For example, it costs EUR 457 (USD 540) to process a 450-kg batch of ephedra into 15 kg of ephedrine, which can be sold for almost EUR 846 (USD 1 000) (EUR 56 (USD 66) per kg), generating profits of around EUR 26 (USD 31) per kg (Table 1). Also taking into account the overheads of an ephedrine laboratory, which may include a solar-powered deep well costing as much as EUR 4 228 (USD 5 000), helps to explain why there is reportedly little interest in producing ephedrine when prices fall below EUR 47 (USD 55) per kg.

TABLE 1

Costs and profits of extraction of 15 kg of ephedrine from 450 kg of ephedra

	Amount	Price (EUR)	Total (EUR)
Inputs			
Dried ephedra (kg)	450	0.74	332.73
Caustic soda (bags)	5	12.12	60.61
Xylene (XL) (<i>bushka</i>)	1	48.48	48.48
Diesel (litres)	100	0.36	36.36
Milling (<i>khawar</i>)	1	12.12	12.12
Salt (<i>man</i>)	80	0.15	12.12
Acid (car battery) (cartons)	1	7.88	7.88
Water (litres)	120	0.00	0.00
		Subtotal	510.30
Labour			
Cook (days)	1	4.85	4.85
Screening (days)	1	4.85	4.85
Unskilled (days)	5	3.03	15.15
		Subtotal	24.85
Taxes			
Taliban (kg)	15	0.30	4.55
		Subtotal	4.55
Costs			
Total			539.70
Per kg			35.98
Output			
Ephedrine (F) (kg)	15	66.67	1 000.00
Profits			
Total			460.30
Per kg			30.69

The cost of producing methamphetamine is significantly higher than the cost of extracting ephedrine, costing EUR 3 551 (USD 4 200) to process a batch of 20 kg of ephedrine into around 15 kg of 'good quality' crystal methamphetamine (Table 2). The profit margins for sale in Bakwa are even less attractive than for ephedrine, with methamphetamine currently priced at around EUR 258 (USD 305) per kg, making profits little more than EUR 19.68 (USD 23.28) per kg. As with other commodities in Afghanistan, the high cost of doing business coupled with low profit margins appears to encourage an economic model where there is an incentive to maximise volume so that sufficient profits can be earned.

TABLE 2

Costs and profits of production of 15 kg of export quality methamphetamine from 20 kg of ephedrine

	Amount	Price (EUR)	Total (EUR)
Inputs			
Iodine (kg)	20	84.85	1 696.97
Ephedrine (F) (kg)	20	66.67	1 333.33
Caustic soda (bags)	30	12.12	363.64
Thinner (barrels)	0.40	696.97	278.79
Red phosphorus (kg)	7	33.33	233.33
Gas (kg)	30	1.54	46.15
Xylene (XL) (litres)	7	1.61	11.27
Cloth (metres)	4	1.21	4.85
		Subtotal	3 968.33
Labour			
Cook (kg)	15	12.12	181.82
Unskilled (2 days)	3	6.25	18.75
		Subtotal	200.57
Taxes			
(kg)	15	1.82	27.27
		Subtotal	27.27
Costs			
Total			4 196.17
Per kg			279.74
Output			
Methamphetamine (kg)	15	303.03	4 545.45
Profits			
Total			349.28
Per kg			23.29

The low profit margins and lack of liquidity in the business appears to result in a lack of stability for those involved. One methamphetamine cook compared the occupation to being a gambler, claiming that he and his employer, the laboratory owner, were not always paid in cash or on time. In some cases, he would be paid in-kind by the laboratory owner, on one occasion with a second-hand car that he sold for less than he was due for his work producing methamphetamine. It seems reasonable, with such low margins available on crystal methamphetamine locally, that Afghan producers could be drawn into cross-border smuggling to increase profit margins. For example, methamphetamine exported to Iran would achieve more attractive prices, with those prices increasing in relation to the distance the commodity can be smuggled: almost EUR 286 (USD 338) per kg on the Iranian border in June 2020, compared with between EUR 905 (USD 1 070) and EUR 1 353 (USD 1 600) per kg in central and western Iran (cited in EMCDDA, forthcoming).

Assessing the magnitude of production

The total amount of methamphetamine produced in Afghanistan is hard to estimate, but the insights gained from the cooks in Bakwa, coupled with a detailed analysis of high-resolution satellite imagery of the same area, suggest that the scale is considerable.

FIGURE 9

Dried waste dumped outside an ephedrine lab, Bakwa, Farah, August 2020



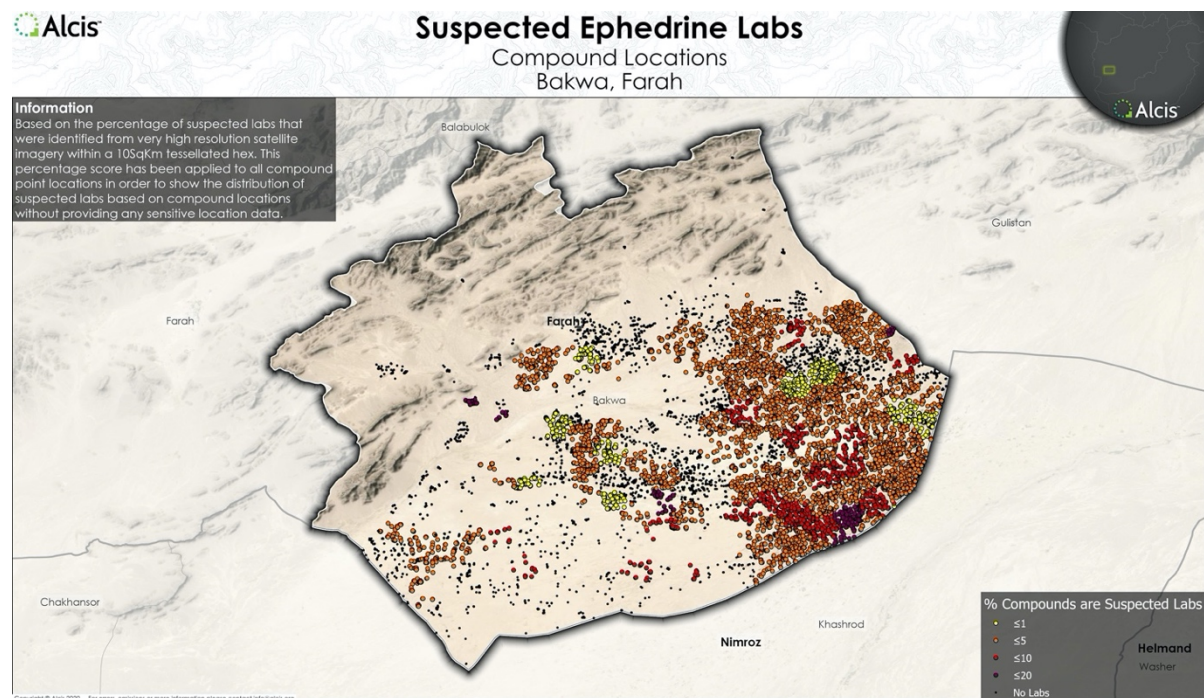
In addition to the details of the processes taking place, the cooks interviewed provided very specific information on the layout of the compounds and the equipment used, and identified unique visual signatures that could be applied to identify locations using high-resolution satellite imagery. The interviews were particularly useful in developing a deeper knowledge of the two-tiered structure of production in Bakwa, and the transition to the production of ephedrine and methamphetamine in separate compounds.

The small batch size, low levels of waste and the preference for processing inside in a cleaner environment, make it almost impossible to distinguish a methamphetamine laboratory from a typical

household compound in Bakwa. Ephedrine processing sites, on the other hand, with outdoor processing, production at scale and associated solid and liquid waste are more easily identified (Figure 9). In this study, 14 278 individual compounds found within the district boundary of Bakwa were assessed to identify potential ephedrine extraction laboratories in the area. The analysis revealed 329 suspected ephedrine extraction sites, many of which were identifiable from the large amounts of liquid and solid waste that could be observed outside the compound, as well as other features. These locations are plotted on Figure 10, highlighting the high density of sites located near the main bazaar.

FIGURE 10

Potential ephedrine extraction sites identified in Bakwa, Farah



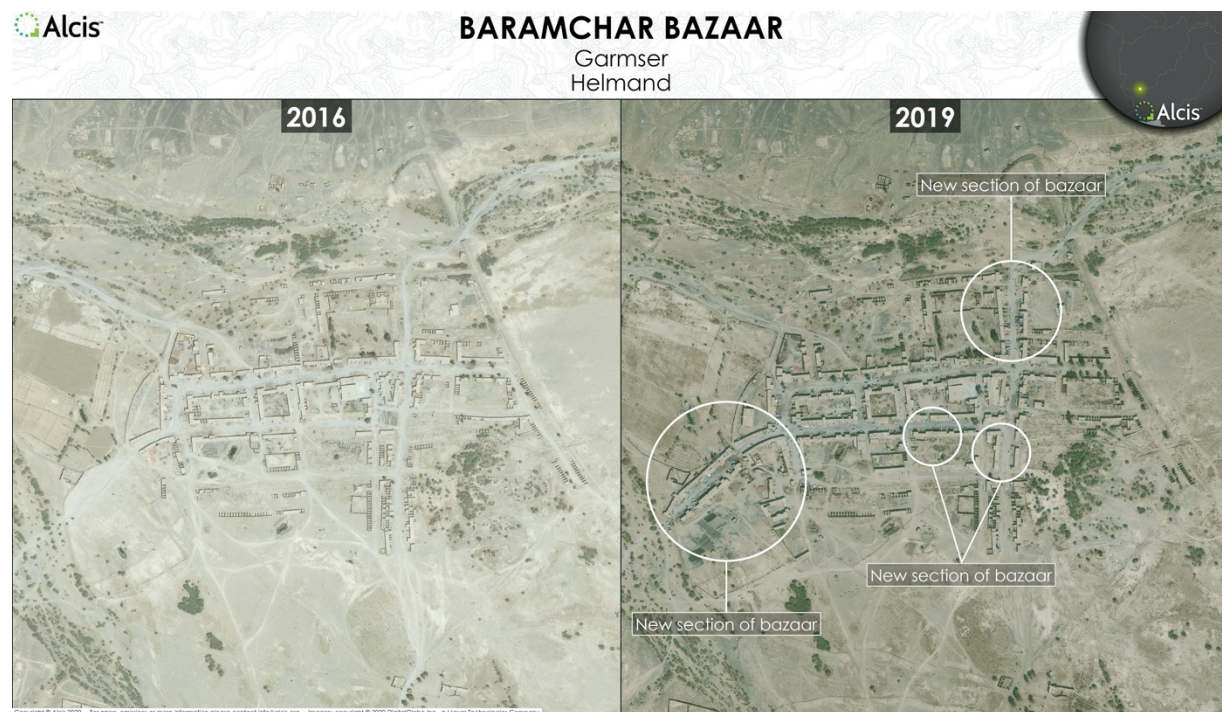
It is difficult to accurately assess the scale of production of ephedrine in the region; however, some rudimentary calculations are possible. According to the cooks, the production of ephedrine in Bakwa is a year-round activity, although the winter months are less active owing to crop accessibility issues in the central highlands and the plants going dormant. The inventory from the previous season then becomes important. The cooks interviewed claimed to work between 20 and 25 days per month, depending on the season. As such, if operating 20 days each month, the 329 suspected locations would be capable of producing around 98 tonnes of ephedrine per month, requiring up to 3 000 tonnes of dried ephedra..

Using the conversion and work rates reported in Bakwa, this amount of ephedrine could produce, theoretically, around 65.5 tonnes of crystal methamphetamine per month. In addition, it can be estimated that around 500 methamphetamine laboratories would be needed to process this amount of material. The reports of ephedrine being shipped to Nimroz and Herat, and significant seizures of ephedrine on the

Afghan border by Iranian forces, imply that it is currently unlikely that there is this number of methamphetamine laboratories in Bakwa itself. It is possible however that a proportion of the ephedrine produced will be transported for production elsewhere, either in other parts of Afghanistan or in neighbouring countries, such as Iran, or in areas on the Afghanistan-Pakistan border, such as in Baramchar, a focal point for the illicit drugs industry in southern Afghanistan (US law enforcement official, personal communication, September 2019). High-resolution satellite imagery shows that this bazaar expanded during the same period as the expansion of the methamphetamine industry (Figure 11).

FIGURE 11

Expansion of the bazaar at Baramchar between 2016 and 2019



A burgeoning synthetic drug economy

The growing synthetic drug industry apparently makes a significant contribution to the economy of Bakwa. A good indicator of this is the development of Abdul Wadood bazaar over the last three years. High-resolution satellite imagery charts the growth of this bazaar from a small number of shops in June 2016 to an extended market with a collection of stores on both sides of the road in early 2019. Since then, the bazaar has grown further, despite the Afghan National Defence and Security Forces (ANDSF) mounting an operation there in April 2019 (Figures 12 and 13) (Mansfield et al., 2019).

FIGURE 12

Growth in the Abdul Wadood bazaar from April 2017 to August 2019

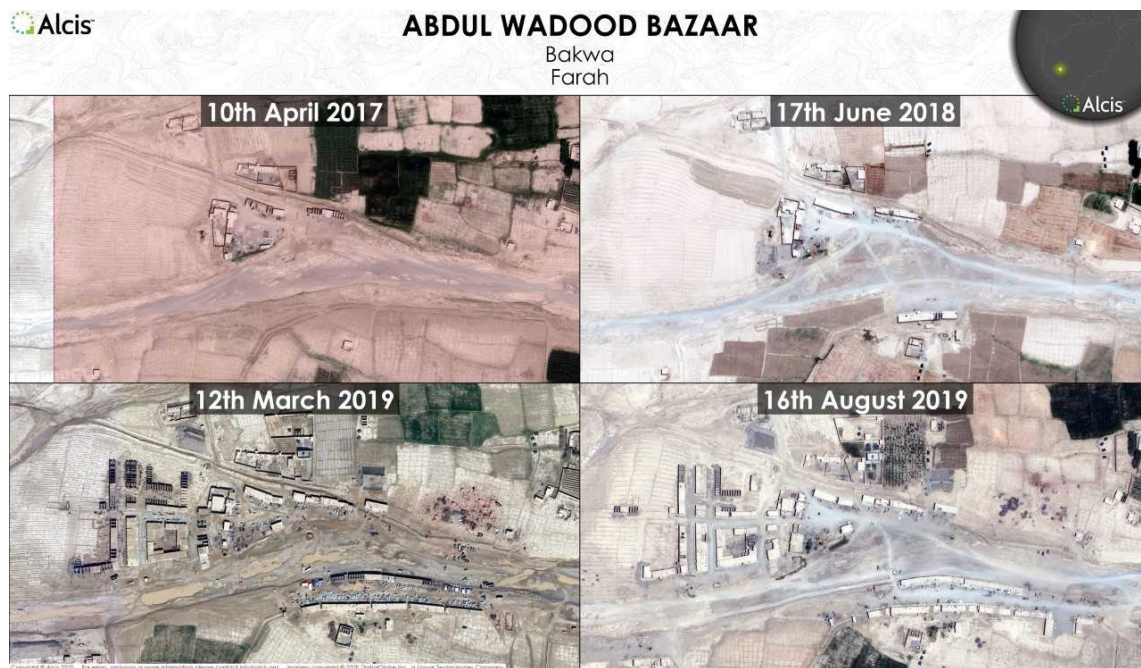


FIGURE 13

Remains of stores in Abdul Wadood bazaar, Bakwa following a security operation in April 2019



In the bazaar at Abdul Wadood, traders sell everything required for the extraction of ephedrine from ephedra crops and the production of methamphetamine. The economic growth in Bakwa has also supported the emergence of two further bazaars in the area where household goods and materials for the synthetic drug industry can be purchased.

This area appears to be the home of the primary wholesale market in the south-west for the ephedra crop coming from the central highlands. The dried crop transported from the mountains is stored, milled and left in the open area behind the main bazaar (Figure 14). The scale of ephedrine production implies that as many as 2 400 trucks per year transporting ephedra would be unloaded in Abdul Wadood, providing jobs for local drivers, labourers, traders and guards.

FIGURE 14

Dried ephedra being unloaded and milled in the open at Abdul Wadood bazaar, Bakwa, Farah, August 2019



Based on the findings from this research, it is estimated that the production of ephedrine may employ as many as 2 300 people in the area, each earning between EUR 63 (USD 75) and EUR 101 (USD 120) per month. A further 200 jobs would be supported locally if the ephedrine were converted into methamphetamine in Bakwa. While unskilled labourers in methamphetamine production earn the same as those making ephedrine, the most skilled methamphetamine cooks have the possibility of earning up to EUR 2 049 (USD 2 424) per month. Combining these totals, it appears that synthetic drugs could contribute up to EUR 46.8 million (USD 55.4 million) to the local economy in wages. If the potential amount of ephedrine produced in Bakwa were converted into methamphetamine locally, the industry could be worth an estimated EUR 203 million (USD 240 million) in Bakwa alone. Based on what is known about the ‘taxes’ charged by local groups on the transportation of ephedra crops from the central highlands and the production output assessments of ephedrine and methamphetamine in Bakwa, EUR 3.5 million (USD 4.2 million) per annum in taxes could potentially be paid to the Taliban or other groups taxing activities (Mansfield et al., 2019). With fieldwork revealing growing numbers of reports of further ephedrine and methamphetamine processing in the neighbouring district of Khash Rud in the province of Nimroz — and imagery supporting these claims — as well as in the district of Gulistan in Farah, Ghorian in the province of Herat and in a number of districts in the Spinghar area of Nangarhar, there are growing concerns that the output of Afghanistan’s methamphetamine industry has the potential to rival the already sizeable opiate economy in this area.

Conclusion: does Afghanistan have the potential to become a major methamphetamine-producing region?

This study is based on interviews with those involved in or who have intimate knowledge of methamphetamine production in Afghanistan, triangulated with documentary sources and satellite imagery. In a complex area such as this, all conclusions need to be drawn with caution and estimates in particular regarded as provisional, based on the information currently available. Nonetheless, the data reported here on the potential scale of ephedrine and methamphetamine production emanating from this remote corner of Afghanistan, the income it generates and the speed at which it has emerged are both surprising and worrying. Further research is urgently required to explore this topic further and substantiate some of the preliminary observations reported. Other information sources exist, however, that add support to the observation that methamphetamine production is growing in importance in this country. For example, it is worth noting that, in 2019, United States Forces Afghanistan and ANDSF destroyed 68 methamphetamine laboratories over a 24-hour period in this area. It is understood that a further 32 target sites were not dismantled owing to concerns about possible large numbers of civilian casualties (UNAMA and OHCHR, 2019). In addition, a research report into methamphetamine consumer markets in eastern and southern Africa suggests that methamphetamine produced in Afghanistan is being trafficked alongside heroin into Africa (Global Initiative Against Transnational Organized Crime, 2020). Finally, in September 2020, with the assistance of colleagues in Pakistan and in collaboration with UNODC and the US Drug Enforcement Administration, Afghan customs authorities seized 6 tonnes of iodine, a key chemical used in the methamphetamine production process (Aslam, 2020).

With respect to the assessment of the future threat that may exist for increased production, it is also worth noting the considerable scope for ephedra crop cultivation in Afghanistan. There are 192 000 km² of land higher than 2 500 metres, where it is reported that ephedra could potentially be grown (Figure 15). Some of that vast area will clearly be inaccessible; however, with reports of ephedra harvesting from at least eight provinces (Mansfield et al., 2019), there is already evidence that potential exists for increasing the production of this crop.

With respect to the fate of the ephedrine and methamphetamine produced, there are some indications from recent media reports suggesting that Iran may be one of the destinations. The Iranian authorities have seen a dramatic increase in seizures of ephedrine and methamphetamine in the Afghan border zone and are increasingly concerned about the availability of cheap, 'low quality' crystal methamphetamine in the border areas and also in Tehran. Reports indicate that the wholesale price of methamphetamine decreased by more than 50 % between March 2019 and June 2020, to EUR 955 (USD 1 130) per kg. Prices as low as EUR 286 (USD 338) per kg have been reported near the Afghan border, and seizures of both ephedrine and methamphetamine in liquid form have increased along Iran's eastern border (EMCDDA, forthcoming). Although Iran and Pakistan provide considerable consumption markets, other potential markets also exist in the region.

FIGURE 15

The area over 2 500 m altitude in Afghanistan



There are also a growing number of reports of large amounts of methamphetamine connected with Afghanistan being seized further afield. In February 2020, a notable interdiction by the Sri Lankan Navy resulted in the seizure of 400 kg of heroin and 100 kg of methamphetamine (Pandey, 2020). Moreover, in May 2020, more than 800 kg of methamphetamine that had been smuggled from Iran was seized in a warehouse in Indonesia (Assegaf, 2020). It is believed that the origin of the methamphetamine may have been Afghanistan (senior US official, personal communication, June 2020). Authorities in Australia have also witnessed an increase in the amount of methamphetamine being seized from Iran (Cormack, 2020), some of which has been identified as being of plant origin, suggesting that Afghanistan may have played a role (Australian Federal Police, personal communication, August 2020).

The low wholesale price of methamphetamine in Afghanistan, currently around EUR 237 (USD 280) per kg, compares very favourably with the high price in Myanmar, of almost EUR 2 537 (USD 3 000) per kg (International Crisis Group, 2019), the most recent price available. It is possible that this price differential will be exploited, not only by Afghan drug producers and traders but by those in neighbouring countries. The number of ephedrine extraction laboratories in Bakwa, the scale of methamphetamine production and the increasing amounts of both seized in the region may indicate a growing international division of labour in the production of and trade in methamphetamine. Further investigation is clearly needed to better understand the scale and nature of the threat but, given the potentially large global market for methamphetamine, any significant new source would be a policy concern that could also indirectly have an impact on security in the region.

Taken together, this analysis suggests that the ephedrine and methamphetamine industry has emerged in Afghanistan and there are now indications of international exports suggesting that country is beginning to penetrate international markets. Despite the limited scope of this research, focusing on Bakwa in south-west Afghanistan, the degree to which producers in this area adopted new technologies and established synthetic drug production serves as a reminder of how dramatically drug markets can change over short periods of time. Given the regular heroin traffic and well-established trafficking routes between south-west Asia and Europe, there is an urgent need to assess the threat posed by methamphetamine produced in Afghanistan to both the country itself and countries on the known heroin trafficking routes, including countries neighbouring the European Union.

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